the forceps or otherwise, it does not itself move, but the other or unpoisoned half immediately responds to the stimulation. If *S. laciniata* be the species of Medusa employed, this result is particularly well marked, from the fact that the unpoisoned half responds to the stimulation by performing the highly distinctive spasmodic movements already described. I have also satisfied myself that curare asserts its peculiar influence upon individuals of the covered-eyed Medusæ. In all cases overpoisoning paralyzes the excitable as well as the motor system. The strength of the solution I used was 1 in 2500, and in this solution the poisoned half required to soak for half an hour.

(*e*) If any sized portion of a contractile strip cut from the gonocalyx of *A. aurita* be immersed in a sea-water solution of any of the above-mentioned anæsthesiating substances, the contractile waves in the poisoned portion of the strip are first progressively slowed and finally blocked. Upon now restoring the poisoned portion of the strip to normal sea-water, the contractile waves again begin to pass, and eventually do so as freely as before.

If any of the nutrient tubes which cross such a contractile strip transversely be injected with a solution of any of the narcotic poisons, the contractile waves become blocked at the line occupied by that tube. If a discharging lithocyst be similarly injected, it ceases its discharges. From the effects of chloroform and weak solution of morphia, however, it recovers in the course of a night. Alcohol so injected at first causes an increase in the frequency and potency of the discharges, and afterwards progressive torpor. In time, however, the torpidity wears away, and finally the Medusid returns to its normal state.

GEOLOGICAL SOCIETY.

February 2nd, 1876.—John Evans, Esq., F.R.S., President, in the Chair.

"Evidence of a Carnivorous Reptile (*Cynodracon major*, Ow.) about the size of a Lion, with Remarks thereon." By Prof. Owen, C.B., F.R.S., F.G.S., &c.

The specimens described by the author consist of the fore part of the jaws and the left humerus of a reptile obtained from blocks of Triassic (?) rock from South Africa, forwarded by the late Mr. A. G. Bain, F.G.S. The upper jaw displays a pair of enormous canine teeth, much resembling those of *Machairodus*, being of a very compressed form, with the hinder trenchant margin minutely toothed. There is no dentated border to the fore part of the crown. No teeth can be detected in the alveolar border of the right ramus of the lower jaw, which extends about an inch behind the upper canine. In the symphysial parts of the lower jaw the bases of eight incisors and of two canines are visible, the latter rising immediately in front of the upper ones, to which they are very inferior in size, and being separated by a diastema from the incisors. In this character, as in the number of incisors, the fossil resembles *Didelphys*; and in structure both canines and incisors resemble those of carnivorous mammals.

The left humerus is 10½ inches long, but is abraded at both extremities. It presents characters in the ridges for muscular attachment, in the provision for the rotation of the forearm, and in the presence of a strong bony bridge for the protection of the main artery and nerve of the forearm during the action of the muscles, which resemble those occurring in carnivorous mammals, and especially in the Felidæ, although these peculiarities are associated with others having no mammalian resemblances. The author discusses these characters in detail, and indicates that there is in the probably Triassic lacustrine deposits of South Africa a whole group of genera (*Galesaurus*, *Cynochampsa*, *Lycosaurus*, *Tigrisuchus*, *Cynosuchus*, *Nythosaurus*, *Scaloposaurus*, *Procolophon*, *Gorgonops*, and *Cynodracon*), many of them represented by more than one species, all carnivorous, and presenting more or less mammalian analogies, for which he proposes to form a distinct order under the name of Theriodontia, having:—the dentition of carnivorous type; the incisors defined by position, and divided from the molars by a large laniariform canine on each side of both jaws, the lower canine crossing in front of the upper; no ectopterygoids; the humerus with an entepicondylar foramen; and the digital formula of the fore foot, 2, 3, 3, 3, 3 phalanges.

The author further discussed in some detail the remarkable resemblances presented by these early Reptiles, in some parts of their organization, to Mammals, and referred to the broad questions opened out by their consideration. He inquired whether the transference of structures from the Reptilian to the Mammalian type has been a seeming one, due to accidental coincidence in species independently created, or whether it was real, consequent on the incoming of species by secondary law. In any case the lost Reptilian structures dealt with in the present paper are now manifested by quadrupeds with a higher condition of cerebral, circulatory, respiratory, and tegumentary systems, the acquisition of which, the author thought, is not intelligible on either the Lamarckian or the Darwinian hypothesis.

"On the Occurrence of the Genus *Astrocrinites* (Austin) in the Scotch Carboniferous Limestone Series, with the Description of a New Species (*A.*? *Benniei*), and Remarks on the Genus." By R. Etheridge, Esq., jun., F.G.S.

The author, in the introduction to this paper, commenced with a general history of the genus *Astrocrinites* of Austin, commenting upon the change of name it had received from the several authors who had written upon and noticed the species *A. tetragonus* of Austin.

In 1843 Major T. Austin described this aberrant Echinoderm under the name *Astrocrinites*, assigning as its geological horizon the Carboniferous Limestone, and locality Yorkshire.

Dr. H. G. Bronn rejected the name *Astrocrinites* on account of its resemblance to *Asterocrinites* of Münster, and proposed instead that of *Zygocrinus.* Römer, from the four-rayed structure of our *Astrocrinites,* allied it to the Cystoidea rather than to the Blastoidea. Prof. de Koninck and M. le Hon, however, referred *Zygocrinus* to the Blastoidea, and stated their reasons for so doing. Prof. Morris in 1854 altered Austin's *Astrocrinites* into *Astrocrinus*, and does not notice Bronn's name *Zygocrinus.* Prof. Pictet provisionally referred the latter genus structurally to *Codonaster*, noticing, however, its four instead of five pseudambulacra. The author then notices at some length the species he proposes to call *A. Benniei*, which appears to differ much from Austin's *A. tetragonus.* The body or calyx of *A. Benniei* is quadriradiate, having four convex lobes, three of which are alike, the fourth differing considerably from the others; the deep reentering angles between the lobes are occupied by the pseudambulacra; the dorsal surface is densely covered with closely set tubercles, but shows no point of attachment; the ventral surface is flattened, having a large central aperture, from which radiate the four pseudambulacra; excentric as compared with the ambulacral system is a second and pyriform aperture of complex structure. The component parts are then minutely described, followed by careful descriptions of the pseudambulacra, apertures, and ornamentation, also a discussion as to the presence of a madreporiform tubercle. The second part of the paper treats upon the affinities of *A. Benniei* (Ether.) with *A. tetragonus* (Austin). Part the third enters fully and critically into the systematic position of *Astrocrinites* amongst the Cystoidea and Blastoidea. In the concluding and fourth portion of the paper, the localities and geological horizons are given. Twenty-seven figures, occupying three plates, accompanied the paper.

MISCELLANEOUS.

On the Relations of Artemia salina *and* Artemia Mühlhausenii, *and on the Genus* Branchipus. By M. W. J. Schmankewitsch.

The author has observed that under the influence of a gradual concentration of the salt water in which *Artemia salina* lives that species is gradually modified, and at last acquires the characters of *A. Mühlhausenii.* In 1871 the salt marshes near Odessa contained *Artemia salina* in great abundance. At this time, in consequence of the rupture of a dyke, the quantity of salt contained in these pools was rather small, their water marking only 8° Baumé. After the dykes were repaired the concentration increased rapidly, so that in the summer of 1872 the water already marked 14°; in 1873 it had risen to 18°; at the beginning of August 1874 to 23°·5, and in September of the same year it had attained 25°. At the same time that the salting became stronger and stronger, the *Artemia salina* was modified from generation to generation to such an extent that, at the end of the summer of 1874, a great portion of the individuals of this species no longer had caudal lobes, and already presented all